

Vegetable peeler

The invention relates to a vegetable peeler in accordance with the introductory clause of claim 1 or the introductory clause of claim 10.

Vegetable peelers are known for long and are on the market. Widely distributed are vegetable peelers wherein the peeling blade is formed as a so-called pendulum blade which comprises a cutting edge, also called blade, and a guiding plate, also called guiding cross-piece, which extends parallel thereto and delimits the thickness of the portion to be peeled off. Such peeling blades are either held on one side by a shank, like a knife, or are supported at both sides between two lateral surfaces which continue often in a handle, thus forming a grip spaced from the peeling blade.

Vegetable peelers comprising pendulum blades which are held unilaterally by a shank are known, for example, from U.S. Patent Nos. 2,252,094; 2,351,327 or 3,956,825. The embodiments described in these documents differ substantially only in the manner of pivotally supporting the pendulum blade.

Vegetable peelers comprising pendulum blades which are supported at both sides are known, for example, by U.S. Patent No. 2,986,813, U.S. Patent No. 5,865,110 or JP-A-10 155 647. In the case of the vegetable peeler known from the latter document, the guiding cross-piece extending parallel to the blade is subdivided, thus making it flexible and cutting a more or less thick peel disk of the vegetable in dependence on the pressure exerted. The solutions according to the above-mentioned documents have the disadvantage that the hand, with which a known peeler is

held, has to perform large movements in order to be able to guide the peeling blade in an aimed manner.

With a vegetable peeler having a unilaterally held pendulum blade, the user holds normally the shank which extends laterally off the pendulum blade. The use of such a vegetable peeler is substantially effected by a pivotal movement similar to that of a knife. Vegetable peelers having a peeling blade with two sides in form of a pendulum blade are often used with a drawing motion towards the user or with a motion under pressure off the user, the blade following the drawing motion or the motion under pressure. Depending on the embodiment, the distance between the peeling blade and the grip is more or less large.

It is an object of the invention to provide a vegetable peeler of the type mentioned in the outset which is easier and safer to handle.

This object is achieved according to the invention by a vegetable peeler having the characteristics of claim 1 or by a vegetable peeler having the characteristics of claim 10. Advantageous further developments form the subject matter of the respective dependent claims.

In accordance with the invention, the lateral surfaces are directly formed as gripping and bearing surfaces. In this way, as far as possible a direct guidance of the peeling blade is enabled so that there is virtually no longer any lever arm between the hand of the user and the peeling blade. This direct and immediate guidance of the peeling blade enables a better adaptation of the movement of the peeling blade to the contour of the vegetable to be peeled. In the sense of a double effect, the lateral surfaces

serve to receiving and fastening the peeling blade, on the one hand, and as a gripping surface for holding and handling the vegetable peeler, on the other hand, and therefore, the width of the vegetable peeler is larger in relation to the length.

According to a further development of the invention, the gripping surfaces are formed in such a way that they may be clamped between the thumb and at least one finger of one hand and, in use, the fingers engage the bearing bolts of the peeling blade. In this way, the peeling blade can be immediately at the palm, and can particularly simply and precisely be guided. In a likewise simple way, the hand of the user can exert the necessary pressure for holding and actuating the vegetable peeler.

In an advantageous manner,

each gripping surface forms a bearing surface for the peeling blade, the gripping surfaces being preferably interconnected by means of a cross-piece which extends transversely to the peeling direction and is formed as a design or advertising surface. A cross-piece can improve the rigidity of the vegetable peeler, particularly the distortion stiffness of it, so that the peeling blade itself may be formed less stable than in an embodiment of the vegetable peeler without a cross-piece. If each gripping surface is formed as a bearing surface, a mobility of the peeling blade is enabled and, thus, a better adaptation of the peeling blade to the contour of the vegetable to be peeled. Using the cross-piece as a design or advertising surface constitutes a double effect of the cross-piece and may, therefore, also contribute to a progressive and attractive exterior of the vegetable peeler.

According to a further development of the invention, the cross-

piece is parallel to the peeling blade, vaulted convex in upward direction away from the peeling blade or concave in downward direction towards the peeling blade and interconnects the gripping surfaces preferably almost at the center.

According to a preferred embodiment of the invention, the peeling blade is formed as a pendulum blade rotatably held at the lateral surfaces. Thus, the pendulum blade is rotatably supported so that it is able to adapt itself in a particularly easy and quick manner to the outer contour of the vegetable to be peeled. In this way, it is less frequently necessary, to adapt the vegetable peeler to the contour of the vegetable to be peeled; the peeling blade formed as a pendulum blade adjusts rather itself automatically to the contour of the vegetable to be peeled.

In an advantageous manner, the lateral surfaces and the cross-piece (6) are integrally or multisectionally formed, preferably in a plane or ribbon form of sheet metal or plastic material. In this way, production of the vegetable peeler may be simplified. Such a vegetable peeler can also be produced in a very cost saving manner.

According to a further embodiment of the invention, a gripping depression is formed into each lateral surface, the gripping depression being preferably situated at the side of the respective lateral surface opposite the peeling blade. Such lateral surfaces, which are provided with gripping depressions may be particularly easily seized by the inner fingertips so that the fingers can support themselves in a stable way on the gripping surfaces. Even particularly hard vegetables can be peeled efficiently with such a peeler, because such a vegetable peeler is well in the hand, and slipping of the fingers of the

user from the vegetable peeler is prevented to a high extent.

In an advantageous manner, at least one of the lateral surfaces comprises an abutment for the peeling blade. In this way, the excursion of the peeling blade is limited so that safety during peeling, particularly in the case of very vaulted surfaces of individual sorts of vegetables, can be improved.

As has been mentioned above, the previously mentioned object is also achieved by a vegetable peeler having the characteristics of claim 10. This vegetable peeler refers in particular, but not exclusively, to a vegetable peeler of the type mentioned above, which has as a consequence that the characteristics of this second vegetable peeler, although they may advantageously be used in connection with the previously described vegetable peeler, however that such a vegetable peeler may also be used independently from the characteristics of the vegetable peeler described up to now. Therefore, a vegetable peeler having the characteristics of claim 10 makes also sense independently from a previously described vegetable peeler. However, it is possible to combine the characteristics of a vegetable peeler according to claim 10 in any manner with those of the previously described vegetable peeler.

A vegetable peeler according to claim 10 has the peeler blade arranged in the peeling plane or parallel to it and inclined to the peeling direction. In this way, just at the beginning and at the end of a peeling procedure, the contact area between the peeling blade and the vegetable to be peeled is reduced so that less force has to be exerted for peeling the vegetable. Moreover, the peeling procedure can be effected in a simpler way by a peeling blade that is inclined to the peeling direction, because

the vegetable to be peeled is peeled in a saw-like manner, whereas in the case of a peeling blade arranged transversely to the peeling direction, the vegetable is rather split by the peeling blade. The peeling procedure effected in a saw-like manner, however, requires much less force than with splitting the vegetable as described before.

According to a preferred embodiment of the invention an angle is formed between the longitudinal axis of the peeling blade and an axis lying in the peeling plane transversely to the peeling direction, preferably between 3 and 25°, particularly between 10 and 15°. Such an angle has proved worthwhile in the practice of handling the vegetable peeler and constitutes a compromise between a relative large angle, which may offer some advantages in peeling in a saw-like manner, and a small angle by which the thickness of the vegetable skin taken off is increased.

According to a further development of the invention, the peeling blade is inclined to the peeling plane in such a manner that the leading edge and the trailing edge of the peeling blade are in different planes. In this case, the peeling blade works about in form of a planing tool by which advantages can be achieved in practical handling of the vegetable peeler in dependence on the consistency of the vegetable to be peeled.

Embodiments of the subject matter of the invention are subsequently described in detail with reference to the drawings, all characteristics described or illustrated forming the subject matter of the present invention either *per se* or in any combination, independent from their combination in the claims or their reference claims. What is shown is in:

- Fig. 1            a schematic plane view of an embodiment of a vegetable peeler;
- Fig. 2            a schematic side elevation of the vegetable peeler shown in Fig. 1, but without the peeling blade;
- Fig. 3            a front view of the vegetable peeler without the peeling blade;
- Fig. 4            a developed projection of the vegetable peeler according to Fig. 1 without the peeling blade;
- Figs. 5 to 10    plane views of different embodiments of the vegetable peeler having a differently shaped cross-piece;
- Fig. 11           a schematical plane view of a vegetable peeler of a simplified embodiment; and
- Fig. 12           a schematical plane view of a vegetable peeler of a further embodiment.

In Fig. 1, a plane view of a vegetable peeler 1 according to a first embodiment is schematically illustrated. The vegetable peeler 1 comprises two elements, i.e. a substantially U-shaped holder 2 which extends transversely to the peeling direction A and a peeling blade 3 pivotally held therein.

The peeling blade 3 is normally an integral element manufactured of metal or plastic material which includes two parallel interconnected cross-pieces, the front cross-piece forming the cutting edge 31 of the peeling blade, while the rear cross-piece represents the so-called guiding cross-piece 32 of the peeling blade (see Figs. 1 and 5). The guiding cross-piece 32, upon peeling, engages the vegetable to be peeled (not shown), thus determining the thickness of the skin to be cut off. Laterally, in the interconnection region of cutting edge 31 and guiding

cross-piece 32, at each one of the two sides a bearing bolt 30 is formed, the bearing bolts forming the bearing axle of the peeling blade and representing, in a geometrical sense, the pivot axis.

As is indicated mainly in Figs. 1, 5 and 10, the peeling blade 3, according to preferred embodiments, is formed as a so-called pendulum blade.

According to another variant, not shown, a cutter of one of known shapes may be provided in the lateral surfaces.

The holder 2 may be formed integrally or multisectionally. In the embodiments shown, the holder 2 is illustrated as being integral, because this will be that version that is economically produceable in the most favorable way. However, especially with more expensive embodiments, it would also be possible to combine different materials and/or to form the holder in a multisectional way.

The holder 2 of the vegetable peeler 1 has two lateral surfaces 4 interconnected by the peeling blade 3. According to the embodiments illustrated in Figs. 1 to 10 and 12, each lateral surface 4 forms a bearing surface for the peeling blade 3. The lateral surfaces 4 are interconnected preferably almost at the center by a cross-piece 6 extending about transversely to the peeling direction (see arrow A in Figs. 1 and 10) (vide Fig. 2). In Figs. 1 to 3, it can be seen that the cross-piece 6, when using the vegetable peeler 1 extends above the peeling blade 3 and transversely to the peeling direction of the vegetable to be peeled.

As may be seen in Figs. 1 and 2, the width B of the vegetable



peeler 1 is larger in relation to the length L. It may also be seen that the height H is shorter than the width B of the vegetable peeler.

As is represented in Fig. 3, the two leg lengths of the substantially U-shaped holder 2 are shorter than the width of its U-shape, and the width of the U-shape, in substance, extends, in use, above the peeling blade. As may be seen from Fig. 3, a narrow contour or silhouette is visible in a front view. The entire area, as seen, is only a small fraction of the total area of the vegetable peeler.

In the lateral surfaces, which are formed as gripping surfaces 7, axle bearings 10 are provided in which the bearing bolts 30 of the peeling blade 3 are pivotally supported. In vegetable peelers known in the prior art, the lateral surfaces 4 spaced from the grip are directly or indirectly connected to it. In the case of the vegetable peeler according to the invention, however, the lateral surfaces 4 are formed as gripping surfaces 7. The lateral surfaces 4 correspond substantially to one another and are, as shown in Fig. 4, constructed and arranged in a mirror-inverted fashion. Thus, the whole lateral surfaces 4 constitute both bearing surfaces for the peeling blade and gripping surfaces 7. A special construction of the gripping surfaces 7 is not forcibly required, but can further simplify handling of the vegetable peeler. The gripping surfaces 7 are designed in such a manner that they can be clamped between the thumb and at least one finger of one hand of the user, while gripping the bearing bolts 30 of the peeling blade 3

i.e. they can be held firmly between thumb and fingers for actuating the peeling blade.

As is indicated in Fig. 2, a gripping depression 8 is formed into each lateral surface 4. However, it is also possible, in accordance with an embodiment not shown, to provide gripping knobs instead of gripping depressions. While the gripping depressions 8 are formed as concave depressions, when seen from the holding side, knobs will be designed rather projecting to the exterior with respect to the gripping side, i.e. in a convex shape. However, both variants will be provided to hold the vegetable peeler 1 safely even with wet hands, for example.

Each gripping depression 8 is situated on that side of the respective lateral surface 4 which is opposite the peeling blade 3, as is schematically illustrated in Fig. 2.

In order to limit the pivotal or pendulum movement of the peeling blade 3 formed as a pendulum blade, abutments 5 extending to the interior are provided on the lateral surfaces 4 designed as bearing surfaces. At least one of these lateral surfaces comprises such an abutment 5. Preferably, however, the lateral surfaces are symmetrically shaped so that an abutment each is formed on the two lateral surfaces 4. This can be done without any remarkable additional costs. According to Figs 2 to 4, the abutment 5 is formed as a tongue laterally stamped in the side walls of the lateral surfaces. In an embodiment of the vegetable peeler that is manufactured of plastic material, it is also possible to form the abutment as a dog extending to the interior. As has been mentioned, the abutment serves the purpose of limiting the pivotal movement and, thus the pivoting angle of the peeling blade.

As has been mentioned and is schematically shown in Figs. 1 to 10 and 12, the gripping surfaces 7 are connected to one another

preferably almost at the center by the cross-piece 6. This bridging cross-piece 6 may be flat and, thus, may extend parallel to the peeling blade, or, as indicated in Figs. 2 and 3, may be vaulted upwards in a convex fashion away from the peeling blade 3. However, it is also possible to vault the cross-piece downwards in a concave shape relative to the peeling blade 3.

Particularly in an embodiment produced from plastic material, it is also possible to provide reinforcement ribs on the lower surface of the cross-piece 6 which are not shown in detail in the illustrated embodiments.

The cross-piece 6 is preferable formed as a design or advertising surface 9 which, in Fig. 1 by way of example, is merely shown in the form of a flower pattern 12. In so far, the cross-piece can be used particularly advantageously in the sense of a double effect as an advertising surface. Depending of the type of the design elements to be provided on the advertising surface 9, it may be of advantage if the cross-piece is flat, i.e. not curved.

The embodiments illustrated in Figs. 1 to 10 make it clear that the peeling blade 3, as has been mentioned above, is constructed as a pendulum blade rotatably held in the lateral surfaces 4 which are designed as bearing surfaces.

With respect to the shape of the cross-piece 6, a variety of embodiments can be imagined. Apart from the embodiment shown in Figs. 1 to 4, further shapes of the cross-piece 6 are indicated in Figs. 5 to 10.

According to Fig. 5, the front edge 13 of the cross-piece 6 is convex, whereas the rear edge 14 is concave. In the embodiment of

Fig. 6, front edge 13 as well rear edge 14 extend as a straight line, i.e. transversely to the peeling direction. In accordance with Fig. 7, the front edge 13 is a straight line, but the rear edge is vaulted in a concave shape. According to Fig. 8, the front edge 13 is concave, while the rear edge 14 is convex; according to Fig. 9, the front edge 13 is concave, but the rear edge 14 is a straight line. Furthermore, the front edge 13 as well as the rear edge 14, according to Fig. 10, are concave so that the entire vegetable peeler, in a certain sense, has a waisted appearance.

As may be seen from Figs. 5 to 10, it is not necessary that the cross-piece 6 covers the peeling blade 3. To the contrary, it may be desirable for the user if the peeling blade can be observed during peeling. This is particularly the case with the embodiments of Figs. 5, 6, 7 and 10. However, it is neither a necessity for the safety nor for the function of the vegetable peeler to be able to observe the peeling blade during the peeling procedure.

While in the embodiment shown in Fig. 1 the lateral surfaces 4 and gripping surfaces 7 are tapering under an acute angle, the lateral surfaces or gripping surfaces of the embodiments of Figs. 5 to 10 extend parallel to each other. The embodiments according to Figs. 5 to 10 seem to be anatomically more favorable. Correspondingly, the lateral surfaces 4 or the gripping surfaces 7 are shown as having curved to the exterior with their ends 11 pointing away from the peeling blade 3 in order to prevent escaping of the vegetable peeler from the hand.

In all embodiments, the lateral surfaces 4 or the gripping surfaces 7 are designed in such a manner that they can be gripped

by the thumb and at least one finger of one hand. The index finger may engage the cross-piece 6. This handling enables a very precise and direct guidance of the entire vegetable peeler, and particularly of the peeling blade thereof, exerting pressure being possible without any problem and being manageable in a variable way. This is not possible with traditional vegetable peelers where the real grip is relative remote from the peeling blade.

As has been mentioned before, the vegetable peeler 1 according to the invention and in accordance with a simple embodiment, possesses only two lateral surfaces 4 which are interconnected by the peeling blade 3, the lateral surfaces being designed as gripping surfaces 7. Such a vegetable peeler, thus, does not have a cross-piece 6, which interconnects the two lateral surfaces, and is schematically illustrated as a plane view in Fig. 11.

In this embodiment, the peeling blade 3 serves as a connection piece between the lateral surfaces 4. The peeling blade 3 may be connected to the lateral surfaces 4 either in a permanent or in a detachable manner. To this end, each longitudinal end of the peeling blade 3 may comprise a holder 15 which is, for example, arranged in grooves not shown in detail or in recesses at the inner side 16 of each lateral surface 4.

Also in this embodiment, it is possible to provide the peeling blade with bearing bolts not shown in detail in Fig. 11, and to support the same in the lateral surfaces 4 so that the peeling blade 3 may be formed as a pendulum blade, as in the case of the embodiments shown in Figs. 1 to 10. The places of connection between the longitudinal ends of the peeling blade 3 and the lateral surfaces 4, in this embodiment, are designed in such a

way that a relative motion, upon handling the vegetable peeler, between the lateral surfaces 4 relative to the holder of the peeling blade 3 is excluded, the consequence of which being that the lateral surfaces 4 are rigidly held relative to the holder of the peeling blade 3. It is clear that the lateral surfaces, in this embodiment of the invention too, can have abutments for limiting the pivoting movement of the peeling blade, if the peeling blade is formed as a so-called pendulum blade.

A vegetable peeler according to a particularly preferred embodiment of the invention is shown in Fig. 12, this embodiment being able to be combined with one or more characteristics of the embodiments of Figs. 1 to 10. Independently from that, the vegetable peeler shown in Fig. 12 is also worth being protected for its own. The vegetable peeler 1 of this embodiment has a holder 2 to which a peeling blade 3 is mounted. In accordance with the invention, the peeling blade 3 is arranged in the peeling plane or parallel to it and inclined to the peeling direction according to arrow A.

Between the longitudinal axis 17 of the peeling blade 3 and an axis 18 lying in the peeling plane transversely to the peeling direction, there is an angle 19 which preferably amounts to between 3 and 25°, particularly between 10 and 15°. Thus, the peeling blade, in this last mentioned embodiment, is inclined to the peeling direction and, therefore, also inclined with respect to the holder 2. As shown in Fig. 12, the holder presents two lateral surfaces 4, which are formed as gripping surfaces 7, as is also indicated in Fig. 12. To this end, the ends 11 of the lateral surfaces are vaulted to the exterior, in a similar way as in the case of the embodiments according to Figs. 1 and 5 to 10, in order to prevent escaping of the vegetable peeler from the

hand.

It should be pointed out that the holder 2 could also be formed similar as in the case of traditional vegetable peelers. According to the invention, it is, however, important that the peeling blade is inclined to the peeling direction (see arrow A in Fig. 12). In so far, the last mentioned vegetable peeler 1 refers to all constructions of vegetable peelers wherein the peeling blade extends inclined to the peeling direction, independently of the construction of the holder.

According to a further embodiment of the invention, the peeling blade 3 is arranged inclined to the peeling plane in such a manner that, as is indicated in dotted lines in Fig. 2, the front edge 20 and the rear edge 21 of the peeling blade 3 are in different horizontal planes. In this embodiment, however, the peeling blade 3 is rigidly connected to the lateral surfaces 4 so that the peeling procedure, in dependence on the position of the peeling blade 3 relative to the vegetable not shown in detail, may be effected in the manner of a planing tool.

Thus, a vegetable peeler has been provided which, due to the direct grasping possibility, can be guided in a more direct, and thus more precise, fashion, therefore being easier to handle.